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**PATENT APPLICATION**

**ATTORNEY DOCKET NO. 200308343-1**

**IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE**

**Inventor(s): Suban Krishnamoorthy  
Application No.: 09/684,472  
Filing Date: 10/06/2000**

**Confirmation No.: 4021  
Examiner: Lee, Phillip C.  
Group Art Unit: 2154**

**Title: Modular, Dynamically Extensible, and Integrated Storage Area Network Management System**

**Mail Stop Appeal Brief - Patents  
Commissioner For Patents  
PO Box 1450  
Alexandria, VA 22313-1450**

**TRANSMITTAL OF REPLY BRIEF**

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on August 23, 2006.

This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new ground rejection.)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: )  
Suban Krishnamoorthy ) Group Art Unit: 2154  
Serial No.: 09/684,472 ) Examiner: Lee, Phillip C.  
Filing Date: October 6, 2000 ) Confirmation No.: 4021

For: Modular, Dynamically Extensible, and Integrated Storage Area Network Management System

**REPLY BRIEF**

To: Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Commissioner:

This Reply Brief is submitted in response to the Examiner's Answer mailed August 23, 2006.

**STATUS OF CLAIMS**

Claims 18-35 are pending in the application. In the final Office Action mailed August 26, 2005, independent claim 18 and dependent claims 19-28, 30, and 31 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,654,801 to Mann ("Mann"). Claim 29 was rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,654,801 to Singh ("Singh"). Claim 32 was rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,421,723 to Tawil ("Tawil"). Claims 33-35 were rejected under 35 U.S.C. §103(a) as being obvious over Mann in view of U.S. Patent No. 6,212,825 to Chrabaszcz ("Chrabaszcz"). Claims 1-17 were canceled in the response to the Office Action mailed July 24, 2004.

**GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claims 18-28, 28, 30 and 31 are obvious under 35 U.S.C. §103(a) in view of Mann.

**ARGUMENT**

To establish a *prima facie* case of obviousness the Examiner must establish that *all limitations* recited in the claim are disclosed or suggested by the cited reference. See, MPEP 2143.03. Applicants assert that the Examiner has failed to establish a *prima facie* case of obviousness because Mann fails to disclose (or even to suggest) numerous features recited in the claims.

**I. Rejections Under 35 U.S.C. §103**

Claims 18-28, 30, and 31 were rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,654,801 to Mann ("Mann"). These rejections are traversed based on the arguments submitted with the Appeal Brief and based on the arguments submitted herein, which are responsive to the assertions in the Examiner's Answer mailed August 23, 2006.

**A. Claim 18**

Applicant maintains the position that Mann cannot render obvious claim 18 because Mann fails to disclose or suggest limitations recited in claim 18.

**I. Mann Fails to Disclose or Suggest Device-Type-Specific Protocols**

Independent claim 18 recites limitations directed to device-type specific protocols. The Examiner's Answer argues that the various protocols disclosed in Mann (i.e., AAA, DNS, DHCP) constitute device-type specific protocols. Applicants disagree, and note that there is *no evidence of record whatsoever* to support the Examiner's assertion that these protocols are *device-type-specific protocols*, as recited in claim 18.

As noted in the response to the final Office Action and in the Appeal Brief, none of the services described in column 6, lines 31-36 correspond to a *device-type-specific protocol*, as recited in the claim. To the contrary, each of the protocols disclosed in Mann are general purpose communication protocols, *not device-type-specific protocols*.

For this reason alone, the Examiner has failed to satisfy the evidentiary burden that Mann discloses all elements of the claim.

2. Mann Fails to Disclose or Suggest a Device Agent Comprising an Object-based Device Handler Sublayer and a Protocol-Dependent Device Handler Sublayer, the Protocol-dependent Device Handler Sublayer Comprising Multiple Modules Which Support a Respective Device-Type-Specific Protocol

Independent claim 18 recites the limitation of “an integrated management agent capable of managing components of a storage area network (SAN), the integrated management agent comprising a device agent.” The final Action asserts that Mann teaches this limitation, and appears to equate the Network Control Console, Point of Presence, and Broker described in Mann at column 4, lines 40-53 to the integrated management agent recited in claim 18. The Examiner’s Answer fails to specifically address this issue.

Claim 18 further recites the limitation that “the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the protocol-dependent device handler sublayer comprising multiple modules, each respective module of the multiple modules adapted to support a respective device-type-specific protocol.” The Examiner’s Answer maintains that Mann teaches this limitation, and now cites column 6, lines 24-41 and Fig. 1 to support the rejection. Applicant disagrees. As noted in the Appeal Brief,

nothing in the cited text discloses or suggests *the device agent comprising an object-based device handler sublayer and a protocol-dependent device handler sublayer, the protocol-dependent device handler sublayer comprising multiple modules, each respective module of the multiple modules adapted to support a respective device-type-specific protocol*, as recited in claim 18.

3. Mann Fails to Disclose or Suggest Installing Device-Type-Specific Modules Independently of Other Modules While the Integrated Management Agent is Running

Claim 18 further recites the limitation “wherein a particular module of the multiple modules that is adapted to support a particular device-type-specific protocol may be installed to or uninstalled from the protocol-dependent device handler sublayer *independently of other modules of the multiple modules while the integrated management agent is running.*” The Examiner’s Answer asserts that Mann teaches this limitation, and now cites column 10, lines 19-39, column 12, lines 13-47, and column 6, lines 24-48 to support the rejection. Applicant disagrees. The cited text reads as follows:

FoPs, such as the simplified example shown in FIG. 1, are located throughout the distributed data communications network. PoPs will generally comprise more services than are shown in FIG. 1 and may include more than one node handling network management interface capabilities. It is the task of the network management system of this invention to manage all the services and interfaces housed at the numerous PoPs comprising the comprehensive network.

By way of example, node 28 of FIG. 1 is configured with protocol gateway service 34, Authentication, Authorization and Accounting (AAA) service 36, Domain Name System (DNS) service 38, Dynamic Host Configuration Protocol (DHCP) service 40 and cache service 42. Node 28 may have single instances of each service running or may have multiple instances of a service running. Additionally, node 28 is not confined to having only one service component of a specific type associated with it, i.e., node 28 can be configured to have two or more AAA services, DNS services, DHCP services . . . etc. in communication with node

28. Those of ordinary skill in the art will appreciate that the services shown are not intended to be limiting and that other services and other service configurations can be used without departing from the inventive concepts herein disclosed. Not all services need to be running at each PoP and a PoP may comprise one or more host computers on which one or more of the services may be running.

FIG. 4 is a schematic drawing of a data communications network management system 100 having the capability to automatically recognize and acquire information from nodes or that are added to the network management system 100 manually, in accordance with a presently preferred embodiment of the present invention. Manually, in this sense, refers to services or nodes running services that are started or added at one of the numerous PoPs in the distributed data communications network without a command to do so being issued from the network management operation center; i.e., network control console 114. By having a data communications network management system that automatically recognizes and acquires information from manually added services and nodes, the management system is not burdened with having system administrators update the system with manual data inputs related to the newly added services.

FIG. 6 is a flow chart illustrating a method for seamless integration of a new service or node within a data communications network management system, in accordance with a presently preferred embodiment of the present invention. At 300, a node or service is started manually at a Point of Presence within a data communications network. Manually, in this sense, refers to a service or node that is started or added at one of the numerous PoPs in the distributed data communications network without a command to do so being issued from the network management operation center. The service or node being started has an associated service or control adapter running and is in communication with an information bus. At 310, the newly started node or service begins sending out operational status signals over the information bus. These signals are published as heartbeat events on to an information bus. Heartbeat events are published at a prescribed interval to alert subscribing entities that a specific node or service is still functional.

At 320, these signals are received by an unknowing network management control host. The host has no identity information in its database for this new service or node, therefore, at 330, the network management control host sends out signals requesting identification information. These signals are published as discover events by the database adapter. At 340, these identification request signals are received by the new service or node and the associated control adapter or service adapter sends signals with the requested identification information supplied therein. These events are published as identity events in response to received

discover events. At 350, the subscribing network management control host receives the identity information and stores such in its database. The new service or node has now been integrated into the data communications network management system and the identifying information is kept on file for future reference.

Contrary to the assertion in the Action, nothing in the cited text discloses or suggests *installing or uninstalling protocol specific modules from a protocol-dependent device handler sublayer*, as recited in claim 18. Rather, the cited text appears to relate to using heartbeats to discover and identify new devices or services in a communication network.

The Examiner's Answer asserts that "Mann taught adding or integrating (installing) a new service at one of the Points of Presences . . . This means that the new service component must be installed to the node handling network management interface . . ." Applicants note that the cited text fails even to mention installing (or uninstalling) one or more modules from a protocol-dependent device handler, much less doing so *independently of other modules of the multiple modules while the integrated management agent is running*, as recited in claim 18.

In sum, Mann fails to disclose or suggest numerous limitations recited in claim 18. It is therefore respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness, and that claim 18 is allowable and in condition for allowance.

B. Claim 20

Claim 20 stands rejected over Mann. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

1. Mann Fails to Disclose or Suggest an Integrated Management Agent that Comprises a Dynamic List of Device-Type-Specific Protocols that it is Capable of Using

Claim 20 includes a limitation reciting “the integrated management agent further comprises a dynamic list of device-type-specific protocols that it is capable of using, wherein each device-type-specific protocol is associated with a list of objects and methods, and wherein a given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device handler sublayer.”

The Examiner’s Answer asserts that:

Mann taught when a service adapter supporting a new service (device-type-specific protocol as described in reply to argument 2) is added (installed) to a Point of Presence (col. 10, line 67-col. 11, line 11) (node handling management interface, see col. 6, lines 25-30), a list of object and methods is added to the list of services at a particular Point of Presence at the database. The objects include timestamp, GUID, server name, Point of Presence where the service is located and the methods include information accessing performance and reliability of the services (col. 10, line 11-col. 11, line 26; col 4, lines 57-62).

This argument does not differ materially from the Examiner’s assertion in the Final Action. Applicants incorporate here the arguments submitted in the Appeal Brief. Further, Applicants note that the assertions in the Examiner’s Answer are deficient to establish a *prima facie* case of obviousness. The Examiner’s Answer fail to assert, much less establish, that Mann discloses an integrated management agent that comprises a *dynamic list of device-type-specific protocols* that

it is capable of using, as recited in claim 20. Further, nothing in the cited text discloses or suggests *device-type-specific protocols*, much less an arrangement in which a device-type-specific protocol is associated with a list of objects and methods, and wherein a given list of objects and methods is added to the dynamic list when a given module of the multiple modules supporting a given device-type-specific protocol is installed to the protocol-dependent device handler sublayer, as recited in claim 20.

In sum, Mann fails to disclose or suggest numerous limitations recited in claim 20. It is therefore respectfully submitted that the Examiner has failed to establish a *prima facie* case of obviousness, and that claim 18 is allowable and in condition for allowance.

C. Claim 21

Claim 21 stands rejected over the '120 patent. Applicants traverse this rejection, and assert that the final Action fails to establish a *prima facie* case of obviousness.

Claim 21 includes a limitation reciting that the "integrated management agent further comprises a consistent user interface module coupled to the object manager, wherein at least one device type-specific module is installed, and wherein the at least one device type-specific module further comprises a device handler for coupling a storage system to the integrated management agent."

The Examiner's answer asserts that Mann discloses this limitation, and now cites column 11, lines 11-22 to support the assertion. Applicants disagree.

Col. 11, lines 11-22 reads as follows:

When the discover event includes status performance data requests control adapter 112 or service adapter 108 will respond with a "status" event. The status event provides the NCC 114 with a report of the performance of the node 106 or service 104. An example of information contained within a status event includes; a time stamp, GUID of the publisher, performance data from the source, performance data from the sink, performance data from the protocol handler, and performance data from the facility. The detailed performance information contained within a status event can be stored in the database 120 of NCC 114 for future reference.

Contrary to the assertion in the action, nothing in the text discloses or suggests an integrated management agent which comprises a consistent user interface module coupled to the object manager, wherein at least one *device type-specific module* is installed, and wherein the at least one device type-specific module further comprises a device handler for coupling a storage system to the integrated management agent., as recited in claim 21.

**CONCLUSIONS**

Mann fails to disclose or suggest limitations of appellants' claims. Therefore, Mann cannot be used to establish the required *prima facie* case of obviousness under 35 U.S.C. §103. Appellants urge the Board to reverse the examiner's rejections under 35 U.S.C. §103 of claims 18-35.

Respectfully submitted,

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